

THE RURAL ZONING PLAN OF MARQUETTE
COUNTY, MICHIGAN

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IT IS the purpose of this paper on the rural zoning plan of Marquette County, Michigan, to present some of the problems facing the land-use planners in the northern counties of the Lake states. These problems do not concern simply adjustments to the quality of the land, but involve also a wide variety of social, economic, and geographic factors.

Rural zoning has been in practice for some years in different areas of the United States; on December 30, 1938, however, Marquette County, located in the north-central part of the Upper Peninsula of Michigan (Fig. 1), became the first county in this state to place in operation a rural zoning ordinance (Fig. 2). The plan itself is simple: it merely prohibits agricultural settlement in areas not now serviced by roads and schools; but the forces motivating it are of particular interest to geographers.¹

PHYSICAL BACKGROUND

A quick glance at the physical background of Marquette County reveals at once that, like many regions in the northern part of the United States, it has wide areas within it unsuited to agriculture. Figure 3 shows a division of the county into areas in which the surface conditions are more or less homogeneous. The sand plains indicated here are typical scrubby sterile jack-pine barrens (Pl. I, Fig. 1). The hard-rock knob district, consisting of crystalline knobs from one hundred to three hundred feet high, which are separated by innumerable lakes and spruce swamps, is a characteristic section of Laurentian upland. Only occasionally is there a small patch of

* This article is a condensation of a thesis submitted in partial fulfillment of the requirements for the degree of doctor of philosophy at the University of Michigan.

¹ It must be clearly stated that the promotion of the zoning plan was at all times carried on by residents of the county.

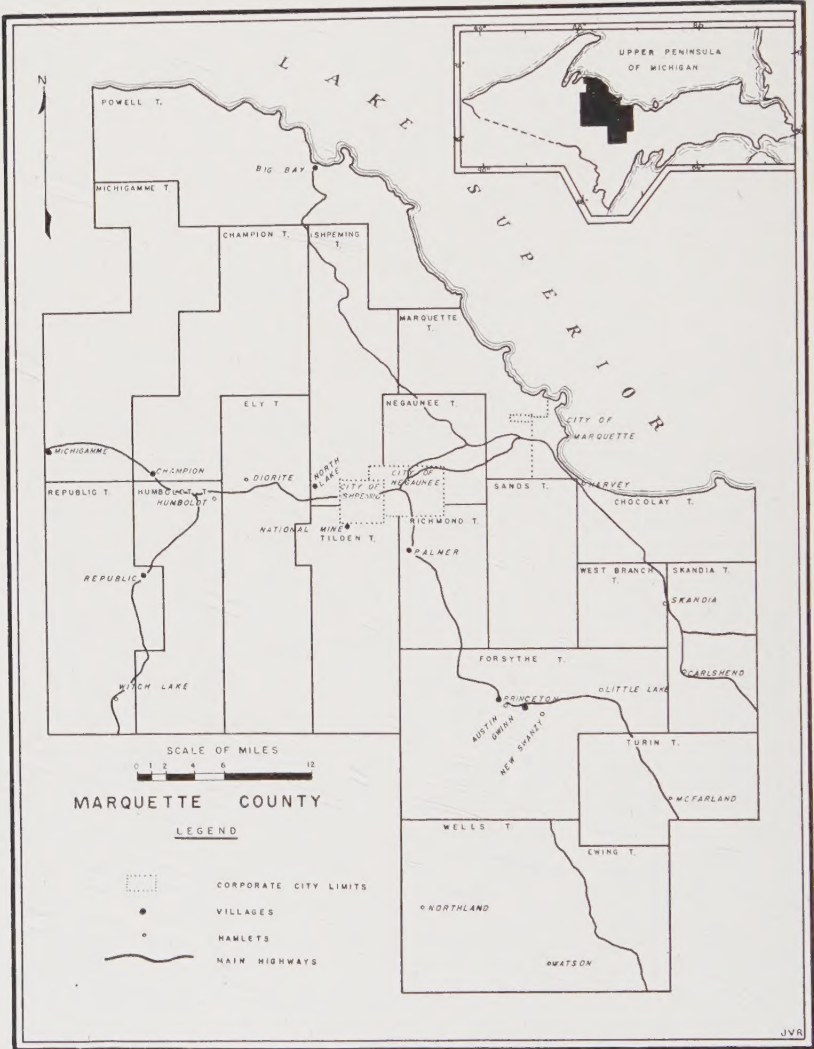


FIG. 1

moraine free enough of boulders for cultivation. Both the sandstone uplands and the Lake Superior borderland have wide stretches of thin sandy soils and long slopes, which are not suitable for farming. Only two of the largest poorly drained areas are shown here, but fully

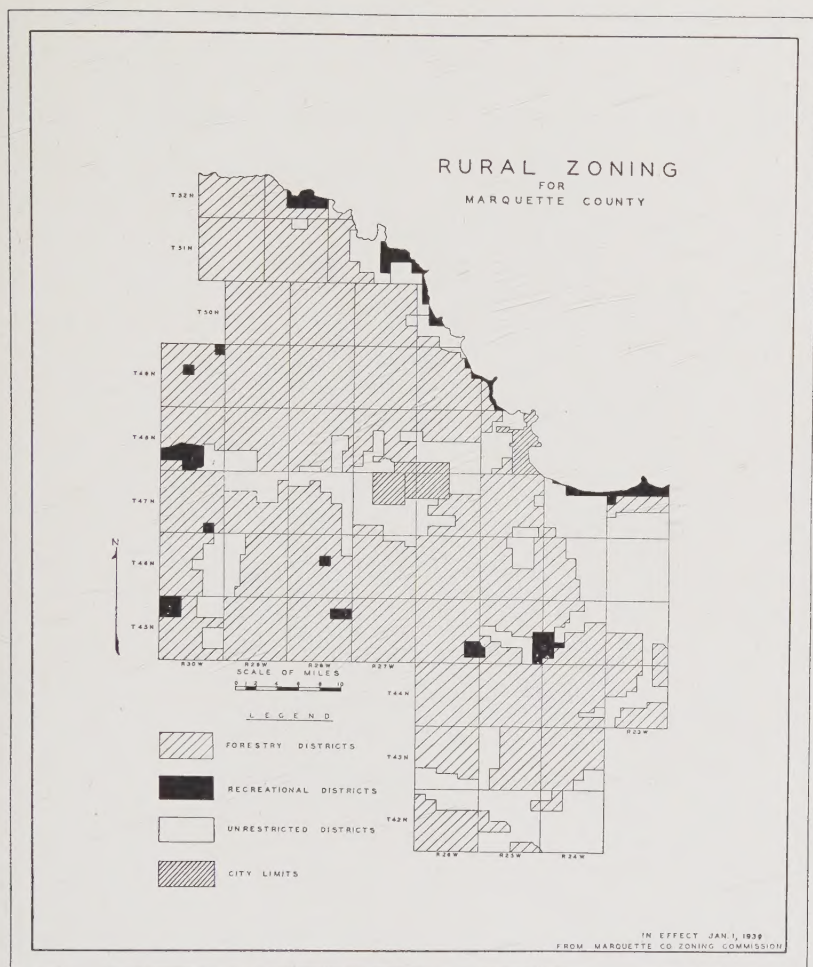


FIG. 2

one fourth of the county is covered by lakes and swamps, most of them small. Nowhere is there any extensive continuous area of superior soils. The Amasa rolling uplands, characterized by moraines, kames, and drumlins, is but slightly above average in the quality of its soil, and its development is hindered by its remoteness from markets and by a short growing season. The Marquette iron range,

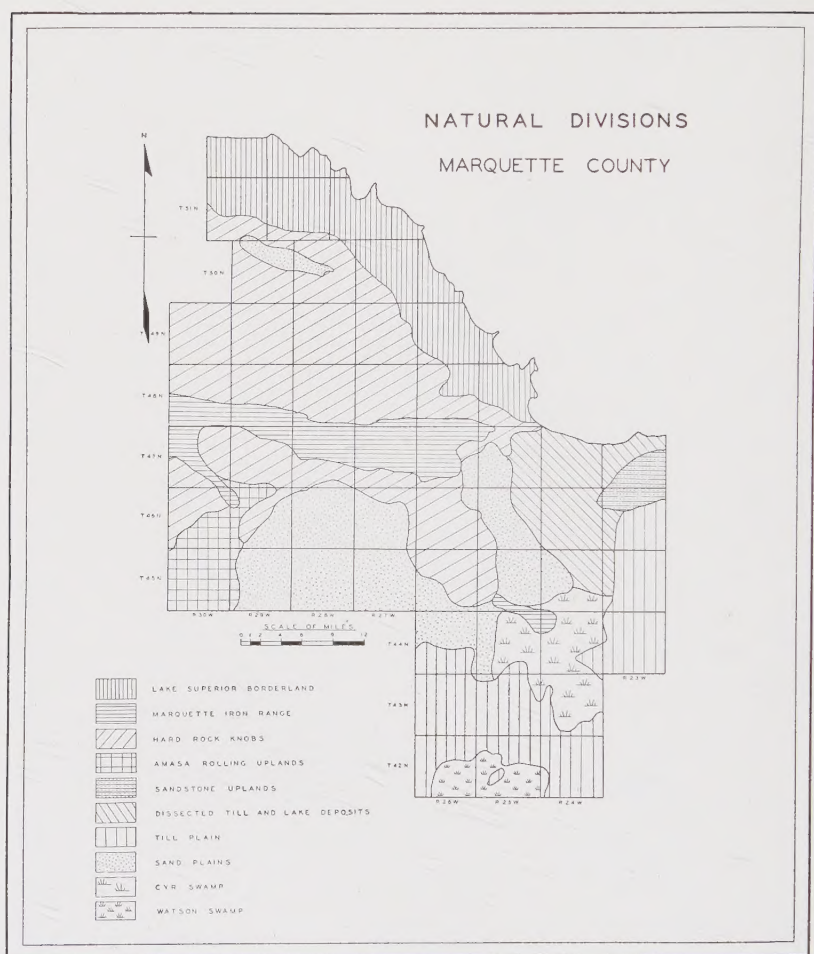


FIG. 3

with its less pronounced relief, glacial gravels, loose slate outcrops, and accessible markets, ranks next to the dissected till and lake deposits region in the number of successful farms. The latter region has the best soil and the smallest percentage of swamp land of any part of the county, and has a further advantage in its nearness to the mining centers. In terms of agriculture, fully three fourths of the county is distinctly submarginal (Fig. 4).

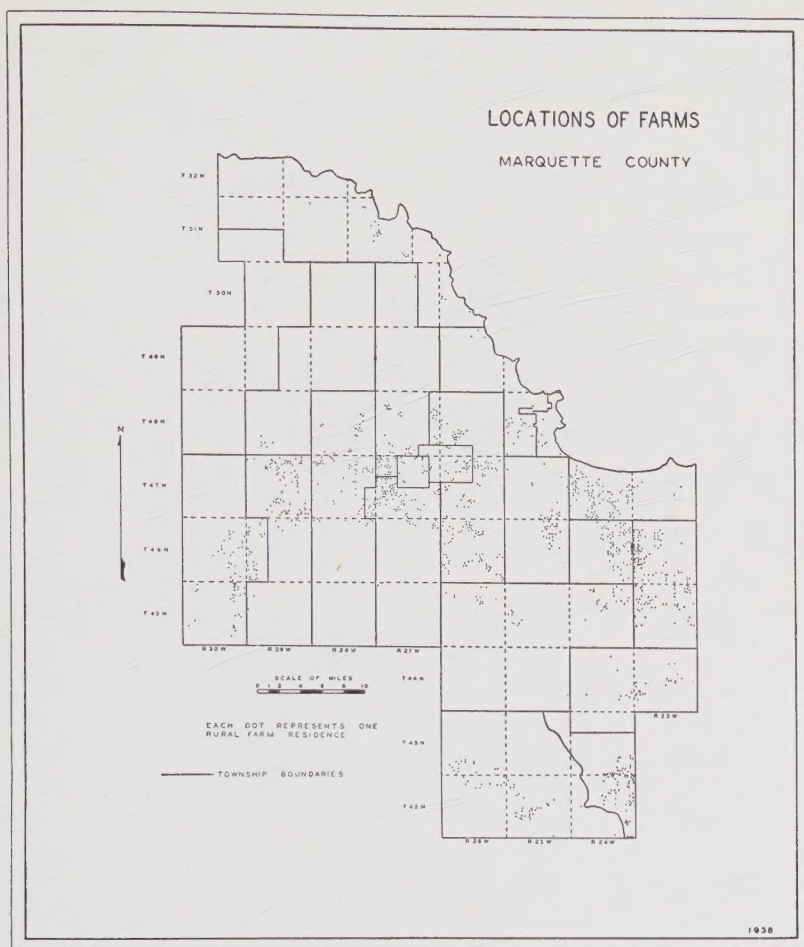


FIG. 4

Lumbering is carried on at present only in small-scale operations, and is based on motor trucking. It has little significance for permanent settlement, since the best and most readily available timber and wood products have already been removed. White pine, red pine, and hemlock were the first trees to be extensively exploited. Today only a few small stands of these trees of saw-timber size remain, and those only in the most inaccessible regions (Pl. I, Fig. 2).

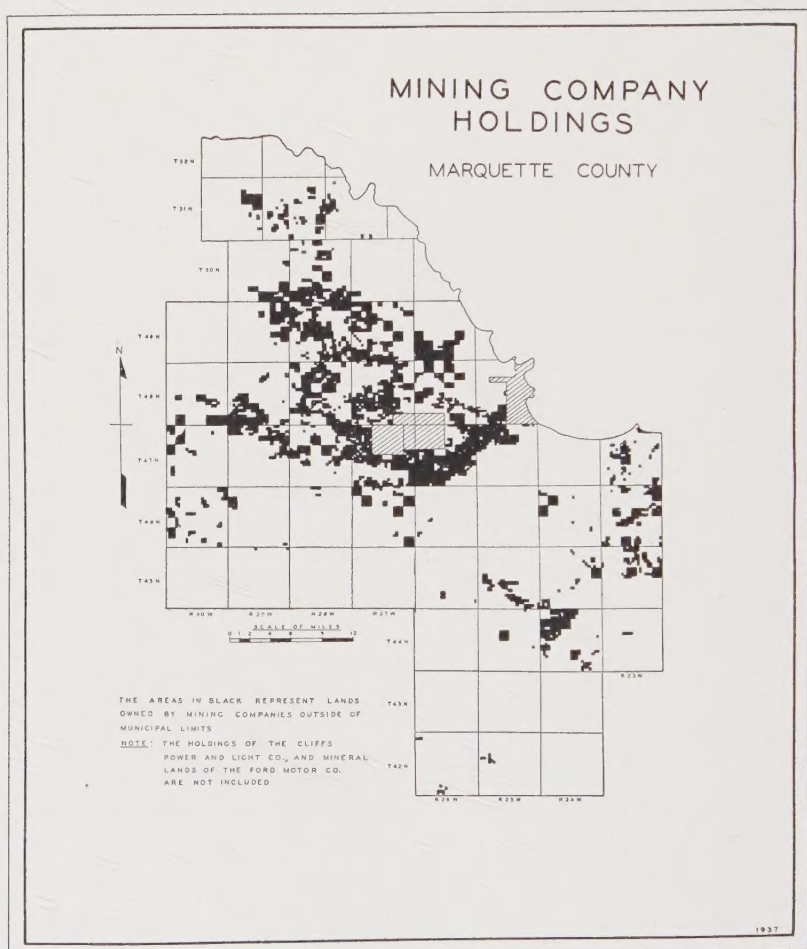


FIG. 5

During recent years forest operations have consisted in cutting the upland hardwoods and the swamp conifers. The former supply lumber for the automobile industry and for furniture, flooring, and other interior trim. The swamp conifers are utilized mainly for pulpwood, posts, railroad ties, and mine props (Pl. I, Fig. 3). During recent years much of the less desirable hardwood has been used in distilling or for firewood.

Large stands of merchantable hardwood remain in only a few localities in the county, mostly in the northwestern part. Pulpwood extraction has been moving northward in the county during the past few years. Most of the swamps in the southern part have been cut over, and although cutting for pulp is still being done in this area the reserves are rapidly being depleted. The largest ones remain in the small swamps in the hard-rock knob district.

The principal industry in the county is the mining of iron ore, mostly hematite, which is found within the Marquette iron range (Fig. 5). The chief iron-bearing formation outcrops in an area approximately five miles wide in the vicinity of Negaunee and Ishpeming. West of this area the formation is deeply buried in the center and comes to the surface in a north and a south limb. The narrowness and the steeply dipping character of most of the iron-ore deposits throughout the county are not advantageous to large open-pit mining (Pl. II, Fig. 1), and, except in a few localities, underground shaft mining is the rule. In 1938 the county's mining industry employed 2,775 persons.

THE HISTORY OF SETTLEMENT AND ITS EFFECTS ON THE ZONING PROBLEM

The focus of settlement in Marquette County since the coming of the first white inhabitants has been the area containing iron reserves, where mining brought about the development of scattered large and small urban centers. Rural settlements at first were located near these urban centers and consisted of both farm and woodworking communities. The latter supplied lumber to the rapidly growing cities and towns or hardwood for the kilns which furnished charcoal to local pig-iron furnaces prior to the development of cheap transportation of ore to the lower Great Lake ports. Nearly all the few farming communities outside the iron district were situated in the areas of better soil and of slightly longer growing season in the eastern and southeastern parts of the county. According to some of the older inhabitants, these early farmers had no difficulty in selling their hay, oats, and potatoes in the urban markets. There were few dairy farms as we know them today, and part-time farms were located only in the immediate environs of the mining towns. No improved roads existed at this time, and there were few rural schools, but the people on the farms made a good living, for prices of agricul-

tural produce were high because of the constant pressure of population in the urban centers.

The last two decades in the nineteenth century brought several events which were to have serious consequences in later years. The first of these was the absorption of the small mining concerns operating tiny open-pit mines with little capital. This absorption was the result of (1) the exhaustion of the surface deposits and the consequent necessity of using expensive underground mining methods and (2) the economic depression of the early nineties, which, with its attendant low prices, wiped out many small operators. A second event was the decline in the demand for mine labor, which came about because of competition from the new Mesabi open-pit operations in Minnesota and because of the change from hand tools to machinery. A temporary boom in local mine employment was experienced during the war years of 1914-18, but it did little to check the steady decrease both of mine employment and population in the urban centers. People living in the mining communities had either to turn to new occupations or to go elsewhere. Some of them moved to the new mining regions in the Rocky Mountain area. Many of them went into the rural sections of the county, hoping either to practice part-time farming and to supplement their income by periodic mine employment or to make a living from farming alone. The number of farms greatly increased between 1890 and 1920.

This settlement of the rural districts was made chiefly by Finnish immigrants. An examination of the county directories of 1870 and 1880 does not reveal a single Finnish name. Only a few are given in the 1890 directory, but the 1901 edition lists a large number. Many of the earliest Finns to arrive in this country went to the mining region of northern Michigan, and, although they had not been miners in the old country, they found mining lucrative and easy to learn. After a brief experience with crowded boardinghouses and after rather violent social contacts with Cornish, Irish, and French-Canadian miners, the Finns took up small plots of land near the mines. These "farms" generally consisted at first of from ten to fifty acres, one or two cows, a horse, and a pig. The cropland supported little else than a house garden, a patch of potatoes, and a small field of oats, with the remainder devoted to hay. The buildings were log cabins (usually whitewashed): a hut for living quarters, a small "crib" barn, and a "sauna" or steam bath. Sometimes the

farmer worked in the mines during the winter and on his farm during the summer, or, if his family was large enough and work was available, he worked full time in the mines, the farm work being done by his family.

Since they were relatively late-comers in the farming districts and since they had little money with which to purchase land the Finns went into the poorer areas and, with the exception principally of Ewing Township, where lumbering formerly supplied a cash income, and of an area near Skandia, they settled lands that were adjacent to the mining districts. Today most of the poor, part-time farms are owned by Finns, the better farms being held by Swedes, Germans, or French-Canadians (Pl. II, Fig. 2; Pl. III, Fig. 1). Within the county, then, one of the most significant problems of submarginal settlement resolves itself into a social question, dominated largely by the degree of adjustment which the Finnish people have made to the land and to a new standard of living and complicated by the fact that the second-generation Finns have refused to be content with the low standard of living of their parents.

PRESENT ECONOMIC OPPORTUNITIES FOR RURAL SETTLEMENT

Settlement in the rural districts of Marquette County, if it is to maintain itself on the land, must in general depend upon the following types of livelihood: agriculture, forestry, mining, the provision of recreational facilities, or combinations of these.

The potentialities of the land for supporting settlement by agriculture alone are slight even in the best farming areas. The most vital factor is climate, although a soil suited to potato cultivation is also important, as well as the farmer's ability to produce and market dairy products and potatoes. Most of the successful dairy farms are located near the three cities Ishpeming, Negaunee, and Marquette. On farms remote from these cities the only dairy product that yields cash dividends is cream, which, because of its relatively high value and low bulk, is able to bear the transportation charges. A farm that depends entirely upon farm income for its support has to be exceptionally well situated and well managed (Pl. III, Fig. 2).

Part-time farming has as its basic economy an association with mining or lumbering. In general, the location of part-time farms is more closely related to the mines or to the timber supply than to land favorable for agriculture. For this reason the concentration of

such farms is near the central part of the county. Nearly all the farms in Humboldt Township are of this type; their operators originally depended upon mining for their cash income, but now depend upon public welfare. These small farms are located within the hard-rock knob region, on ground that should never have been cultivated, for soil and climatic factors are particularly adverse. Under present conditions successful part-time farming can undergo very little expansion in the uninhabited parts of the county because of (1) a decrease in mine employment, (2) the too-great distance to mines still operating, and (3) a depletion of wood reserves.

Forestry as an industry supporting rural settlement is well on the decline, and stranded families of forest workers can be found here and there in the cutover parts of the county.

The recreation industry has, as in other parts of the United States, been responsible for an appreciable growth in local incomes even in the rural areas, but away from the main highways it has not been capable of supporting an increase of rural settlement.

Because of the uncertain character of mine labor few rural families depend entirely upon this occupation for their livelihood. Most of them supplement it with farming or lumbering or by providing for vacationists.

GOVERNMENTAL EXPENDITURES IN RURAL AREAS

The year 1915, approximately, marked the beginning of extensive public expenditures for roads and schools in the county. In every township the tax rate rose rapidly after this date, reached a peak in 1930, and fell sharply between 1932 and 1934,² a decline resulting from a 15-mill property-tax limitation passed by the state legislature in 1933.

Only a small part of the local tax burden is borne by the resident taxpayers. A study of tax-assessment rolls in five townships was made for the purpose of distinguishing between the property of residents and nonresidents. These five townships were Humboldt, West Branch, Ewing, Champion, and Turin, which represent very different combinations of physical and cultural environments. Tables I and II show the valuation and taxes levied on the property of residents and nonresidents, the tax delinquency on the part of resident property owners, and the total valuation, taxes, and tax delinquency in these

² See *Annual Reports of the Marquette County Board of Supervisors, 1912-37.*

TABLE I

VALUATION AND TAXES LEVIED ON PROPERTY OF RESIDENTS AND NONRESIDENTS
AND TOTAL VALUATION AND TAXES LEVIED FOR 1937 IN FIVE TOWNSHIPS
IN MARQUETTE COUNTY *

Township	Total valuation	Valuation on prop- erty of residents	Valuation on prop- erty of nonresi- dents	Total taxes	Taxes on property of resi- dents	Taxes on property of non- residents
Humboldt . .	\$ 460,425	\$68,750	\$391,675	\$ 7,046.86	\$1,059.70	\$ 5,987.16
West Branch	267,300	69,600	197,700	4,097.71	1,080.88	3,016.83
Ewing	107,840	31,830	76,010	2,403.98	728.60	1,675.38
Champion . .	1,033,780	33,840	999,940	23,635.20	771.03	22,864.17
Turin	289,250	18,575	270,675	7,663.26	516.63	7,146.63

* Data from township assessment rolls.

TABLE II

TAX DELINQUENCY ON PROPERTY OWNED BY RESIDENTS AND TOTAL TAX
DELINQUENCY FOR 1937 IN FIVE TOWNSHIPS IN MARQUETTE COUNTY

Township	Taxes levied on property of residents	Percentage of property of residents de- linquent	Total delinquency, in percentage *	Average value per acre of real property of residents
Humboldt	\$868.15	18.08	46.83	\$4.48
West Branch . .	777.34	28.08	18.99	9.58
Ewing	532.74	26.88	58.94	4.70
Champion	771.03	0	8.81	7.43
Turin	361.00	30.09	45.41	6.84

* Data from county treasurer's office.

townships for 1937. From this material the following conclusions are drawn: (1) The percentage of property owned by residents is low in all townships, but lowest in those that contain mineral lands and highest in the better farming districts; (2) The average value per acre of real property belonging to residents is low in all parts of the county; (3) Delinquency of taxes is highest in the nonmining areas (see Fig. 6).

Until the passage of the 15-mill tax-limitation bill in 1933 there

Table III), representing more than ninety dollars for every man, woman, and child (1930 census). A third of this total was allocated to welfare relief.

Two areas show abnormally high per capita government expenditures. One of these is the iron-mining district, where the taxes on mining property having an extremely high valuation pay for a large part of the public services and ease the burden on the resident taxpayers. The mining companies seem not to begrudge superior schools and roads in the towns and villages which contain miners and their families.

The second area is composed of the rural districts that have small, widely scattered farms. In these districts the transportation of school children and the construction and maintenance of farm roads are expensive. The cost of one extra mile of snow removal in the winter usually is greater than the total amount of taxes paid by the farmer whose property the road serves. Until the present zoning plan went into effect every farmer and any other rural resident, no matter how far from schools and highways, could demand, and was entitled to receive, road and school services.

The continuance of high governmental expenditures in the areas outside the iron district will be a difficult problem in the future. At

TABLE III

LOCAL GOVERNMENTAL EXPENDITURES FOR 1938 IN MARQUETTE COUNTY

County general fund.....	\$ 781,214.50 *
Emergency relief (Emergency Relief Administration).....	116,261.42 *
Total school expenses.....	1,132,267.58 *
Township administration.....	66,587.02 †
Municipal government expenditures.....	1,050,534.01 ‡
Works Progress Administration.....	895,795.11 §
National Youth Administration.....	23,342.48 §
Old-age assistance.....	91,410.30 §
Total.....	\$4,157,412.42
Per capita expenditure (1930 census).....	\$94.50

* From the *Annual Report, Marquette County Board of Supervisors*, 1938.

† From data furnished by the Marquette County Board of Supervisors, committee on taxation and finance.

‡ From data furnished by the city treasurers of Ishpeming, Negaunee, and Marquette.

§ From data furnished by the county Emergency Relief Administration office.

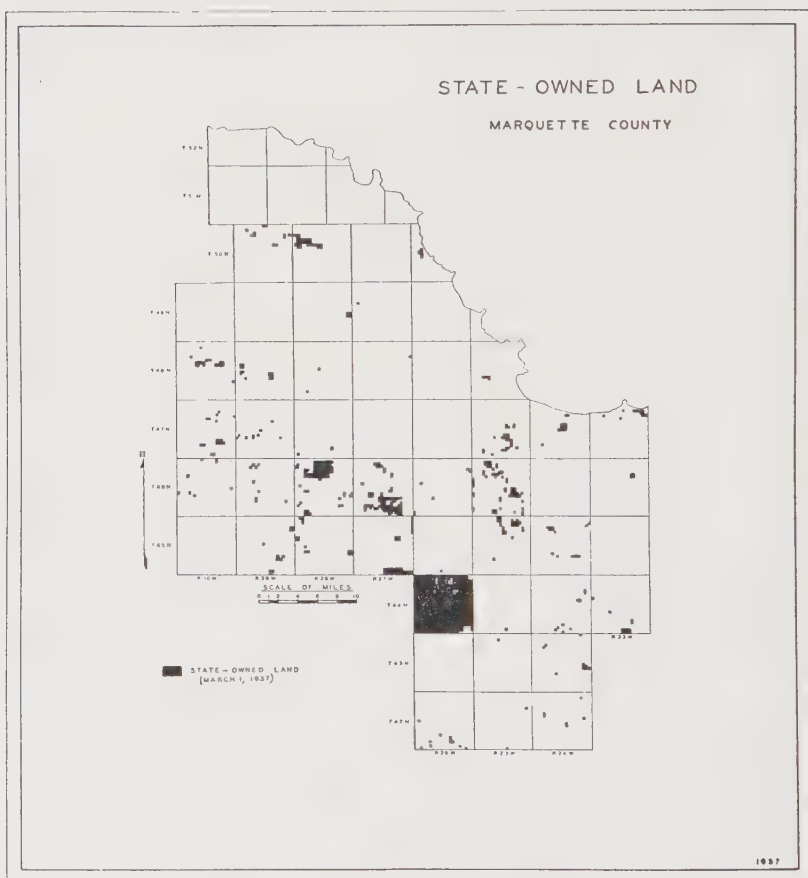


FIG. 7

present a large share of the local taxes in these areas is paid by non-resident owners of timberlands. But since much of this timber is already cut the land will soon revert to the state as tax delinquent, and thus be removed from the tax rolls. Immediately the tax burden, formerly assumed by the owners of such land, will be transferred to other property owners in the township. Finally, either the tax rate will rise or public expenditures will be reduced. Delinquency has already mounted in the cutover lands in the southern part of the county (see Fig. 6), but little of the area has as yet reverted to state

ownership (see Fig. 7).³ The delinquent properties are still on the township assessment rolls, and their tax levies are still listed as assets, although many of the taxes will never be paid. The blow has not yet fallen on the other taxpayers in these townships. When it does come, it will be felt not through greatly increased tax rates (because of the 15-mill tax-limitation act), but through the only other alternative — reduced public expenditures. This will affect the good agricultural districts as well as the poor, the only difference being that they will be better situated financially to withstand it.

CONCLUSIONS

The rural districts of Marquette County have always been marginal areas for settlement. Environmental factors produce certain conditions unfavorable for agriculture. The principal disadvantages are the shortness and coolness of the growing season and the small amount of soils of high natural productivity. Physical circumstances such as these have, however, influenced to a great extent only those farms whose operators make their entire living by farming. Such farms are located mainly in the eastern and southeastern parts of the county and in a few scattered areas elsewhere. Settlement over most of the county has been influenced much more by relationships with mining, lumbering, or recreational developments. Only the sand plains seem to have been avoided or abandoned by all types of permanent rural occupation.

Part-time farms and rural nonfarm homes have penetrated many of the areas that do not have favorable environmental conditions for their continued support. The principal motivating force in this movement has been iron mining. People, especially the Finns, moved out of the cities near the beginning of the present century to combine the advantages of subsistence agriculture with employment in the mines and the urban centers. When mining ceased to occupy as many men as before and when the urban centers started to lose population rapidly, such part-time farms began to have financial difficulties. The economic frontier of settlement had retreated. A similar situation resulted with regard to the part-time farms associated with lumbering. Although these settlements were not so numerous as those based on the mining-farming relationship, they

³ Since 1938 the acreage of state-owned land in the county has greatly increased.

experienced the same difficulties when the timber resources were depleted. But the part-time farms in the county have not been abandoned, and their occupants have not migrated to areas of greater economic opportunity. These people still enjoy certain advantages. All of them are able to demand and receive public services in the form of roads, schools, and welfare relief. If their cash income fails they are certain of public aid. The costs of such services are not paid by these settlers nor, to any great extent, by their more prosperous neighbors. Instead they are being met by nonresident owners of property within the local areas and by county, state, and federal-government funds.

Growing uneasiness at the large expenditures for public services initiated the rural zoning movement in Marquette County. The plan, which, as has been said, merely prohibits agricultural settlement in areas not now serviced by roads and schools, has been criticized because it did not take into consideration differences in the quality of the land. That the procedure followed was urgent and justifiable is supported by much of the data accumulated during the preparation of the research dissertation of which this paper is a summary. Even in the best agricultural areas public expenditures far exceed local tax returns. Future scattered settlement in some of the better unused parts of the county would necessitate too great an outlay of government funds in comparison to the value of the improved land resulting from such settlement. The zoning ordinance is elastic, however, and provides for amending the restrictions if necessary. The county officials have stated that such amendments would be made providing new settlement is made in large blocks, so that the difference between land values and governmental expenditures would not be excessive.

Marquette County well illustrates the pitfalls that can beset attempts to interpret human occupancy solely on the basis of environmental factors or to draw zoning lines with reference merely to the quality of the land. Environmental factors set limits within which the economic frontiers fluctuate. In areas such as Marquette County, which are dominated by mineral exploitation, changes in that industry have violent repercussions on the social and economic structures. These are transmitted to the cultural landscape in diverse ways. Here, the decline in mine employment and the depletion of the timber reserves were indirectly responsible for the rural

zoning movement. Whether an upturn in the mining industry or the regrowth of pulpwood in certain areas will mean a widespread alteration of the zoning plan in the future remains to be seen; both developments are possibilities. Enough land serviced by roads and schools and unrestricted in the zoning plan remains, however, to provide for any normal growth of rural settlement.

Here, at least, is something new in Michigan, and not common in other states — a frontier of settlement established by law. The principal factors responsible for this fixed frontier were not differences in the quality of the land, but certain social and economic conditions.

It is interesting to speculate whether or not abnormally high governmental expenditures in other mining and lumbering areas often maintain “parasitic” settlement beyond normal frontiers. The answer to this question can come only through similar studies elsewhere.

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PLATES I-III



FIG. 1. Characteristic jack-pine vegetation in the sand-plains area



FIG. 2. An original stand of mixed white pine-balsam-paper birch, with a beaver dam in the foreground



FIG. 3. A pulpwood logging camp north of Champion. Both light and heavy trucks are now necessary



FIG. 1. One of the few open-pit iron mines near Palmer
(courtesy of L. H. Halverson)



FIG. 2. A typical part-time farm



FIG. 1. A recently settled part-time farm west of Marquette



FIG. 2. One of the modern dairy farms near Skandia

